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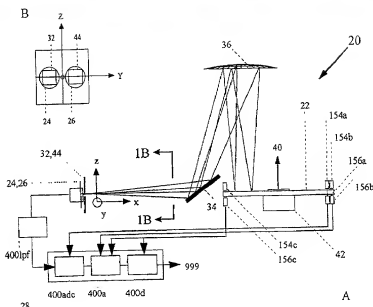
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(71)(72) Applicant and Inventor: HAGLER, Thomas, W. [US/US]; 450 Bonita Avenue, Pleasanton, CA 94566 (US).

(74) Agents: HSUE, James, S. et al.; Majestic, Parsons, Siebert & Hsue P.C., Suite 1100, Four Embarcadero Center, San Francisco, CA 94111-4106 (US).

(54) Title: METHOD AND APPARATUS FOR SPECTRUM ANALYSIS AND ENCODER



(57) Abstract

A disc serving as a spatial radiation modulator has dispersed radiation filters thereon. Each filter has a transmittance or reflectance modulation function of the form $\sin^2(m\theta + \pi r/4)$, where m is a positive integer and p has one of the four values 0, 1, 2, 3. A radiation beam including selected wavelength components is diffracted into an elongated image dispersed according to wavelength. Different wavelength components are focused onto different filters on the modulator and are encoded by corresponding filters. Since the modulation functions of the filters are orthogonal to one another, it is possible to extract the amplitude of each wavelength component after it has been encoded or modulated by corresponding filter from the total detected signal during one measurement.